

## United States Department of Agriculture Natural Resources Conservation Service

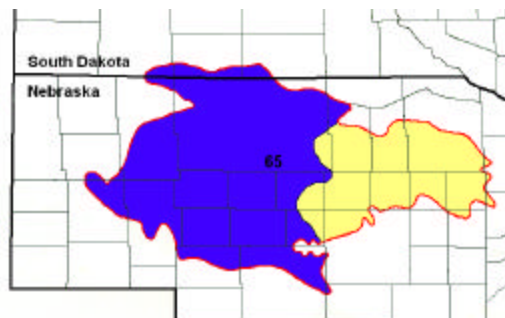
### Ecological Site Description

Site Type: Rangeland

Site Name: Saline Subirrigated 14-22" P.Z.

Site ID: R065XY025NE

Major Land Resource Area:  
65 – Nebraska Sand Hills



### Physiographic Features

Landform: Alluvial flat

Aspect: N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	2600	3900
Slope (percent):	0	2
Water Table Depth (inches):	18	36
Flooding:		
Frequency:	None	Occasional
Duration:	None	Brief
Ponding:		
Depth (inches):	None	None
Frequency:	None	None
Duration:	None	None
Runoff Class:	Negligible	Medium

### Climatic Features

The mean average annual precipitation varies from 14 - 22 inches, but has varied from 12 to 27 inches in the driest to wettest seasons. Approximately 65 percent of the annual precipitation occurs during the growing season of mid-April to late September. The average annual snowfall varies from about 30 inches to about 55 inches. The wind velocity is high throughout the year, averaging 10 to 12 miles per hour. Maximum wind velocities generally occur in the spring.

The average length of the growing season is 138 days, but the growing season has varied from 114 to 168 days. The average date of first frost in the fall is September 25, and the last frost in the spring is about May 10. July is the hottest month and January is the coldest. It is not uncommon for the temperature to reach 100 °F during the summer. Summer humidity is low and evaporation is high. The winters are characterized with frequent northerly winds, producing severe cold with temperatures dropping to as low as -30 °F.

Growth of native cool season plants begins mid to late March and continues to late June. Native warm season plants begin growth in early May and continue to late August. Green up of cool season plants may occur in September and October when adequate soil moisture is present.

**Site Type: Rangeland**  
**MLRA: 65 – Nebraska Sand Hills**

**Saline Subirrigated 14-22" P.Z.**  
**R065XY025NE**

	<u>Minimum</u>	<u>Maximum</u>
<b>Frost-free period (days):</b>	131	145
<b>Freeze-free period (days):</b>	150	165
<b>Mean Annual Precipitation (inches):</b>	14	22

**Average Monthly Precipitation (inches) and Temperature (°F):**

	Precip. Min.	Precip. Max	Temp. Min.	Temp. Max.
January	0.33	0.52	9.1	37.8
February	0.39	0.73	13.5	43.7
March	0.86	1.41	21.3	50.0
April	1.51	2.25	31.4	61.7
May	2.87	3.65	41.5	72.1
June	2.94	3.33	51.3	82.2
July	2.05	2.92	57.4	88.2
August	1.07	2.56	55.6	86.6
September	1.16	2.02	44.7	77.7
October	0.87	1.18	33.0	66.6
November	0.51	0.75	20.5	49.6
December	0.31	0.52	11.5	40.3

<b>Climate Stations</b>		<b>Period</b>	
<b>Station ID</b>	<b>Location or Name</b>	<b>From</b>	<b>To</b>
NE2000	Crescent Lake Natl WLR	1948	1997
NE2647	Ellsworth 15 NNE	1963	1997
NE6970	Purdum	1948	1997
NE7665	Scottsbluff WSO AP	1948	1997

For other climate stations that may be more representative, refer to <http://www.wcc.nrcs.usda.gov>.

## Influencing Water Features

This ecological site has a combination of physical and hydrological features that: 1) provide season-long ground water within 3.5 feet of the surface, 2) allows relatively free movement of water and air in the upper part of the soil, and 3) are rarely, or occasionally flooded.

<b>Wetland Description:</b>	<u><b>System</b></u>	<u><b>Subsystem</b></u>	<u><b>Class</b></u>	<u><b>Sub-class</b></u>
Cowardin, et al., 1979	Palustrine	N/A	Emergent Wetland	Persistent

**Stream Type:** None  
 (Rosgen System)

## Representative Soil Features

The features common to all soils in this site are the fine sand and loamy fine sand textured surface soils and slopes of 0 to 2 percent. The soils in this site are somewhat poorly drained and formed in eolian sand and/or sandy alluvium. The surface layer is 0.5 to 10 inches thick. The texture of the subsurface ranges from loamy fine sand to sand. Finer textured layers may occur in the lower parts of some profiles. Runoff as evidenced by patterns of rill, gully or other water flow is negligible due to the low slope gradient and high intake rate of these soils. Cryptobiotic crusts are present, but their function is not well understood. Some pedestalling of plants occurs, but it is not very evident on casual observation and occurs on less than 5% of the plants.

More information can be found in the various soil survey reports. Contact the local USDA Service Center for soil survey reports that include more detail specific to your location.

Major soil series correlated to this ecological site include: Wildhorse.

Other soil series that have been correlated to this site include: Janise, Selia and Wann Variant.

**Parent Material Kind:** alluvium

**Parent Material Origin:** mixed

**Surface Texture:** fine sand, loamy fine sand, sand

**Surface Texture Modifier:** none

**Subsurface Texture Group:** sandy

**Surface Fragments  $\leq$  3" (% Cover):** 0

**Surface Fragments > 3" (%Cover):** 0

**Subsurface Fragments  $\leq$  3" (% Volume):** 0-5

**Subsurface Fragments > 3" (% Volume):** 0

	<u>Minimum</u>	<u>Maximum</u>
<b>Drainage Class:</b>	somewhat poorly	moderately well
<b>Permeability Class:</b>	moderately slow	rapid
<b>Depth (inches):</b>	>80	>80
<b>Electrical Conductivity (mmhos/cm):</b>	0	20
<b>Sodium Absorption Ratio:</b>	6	105
<b>Soil Reaction (1:1 Water):</b>	8.5	9.9
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	NA	NA
<b>Available Water Capacity (inches):</b>	3	6
<b>Calcium Carbonate Equivalent (percent):</b>	0	15

## Plant Communities

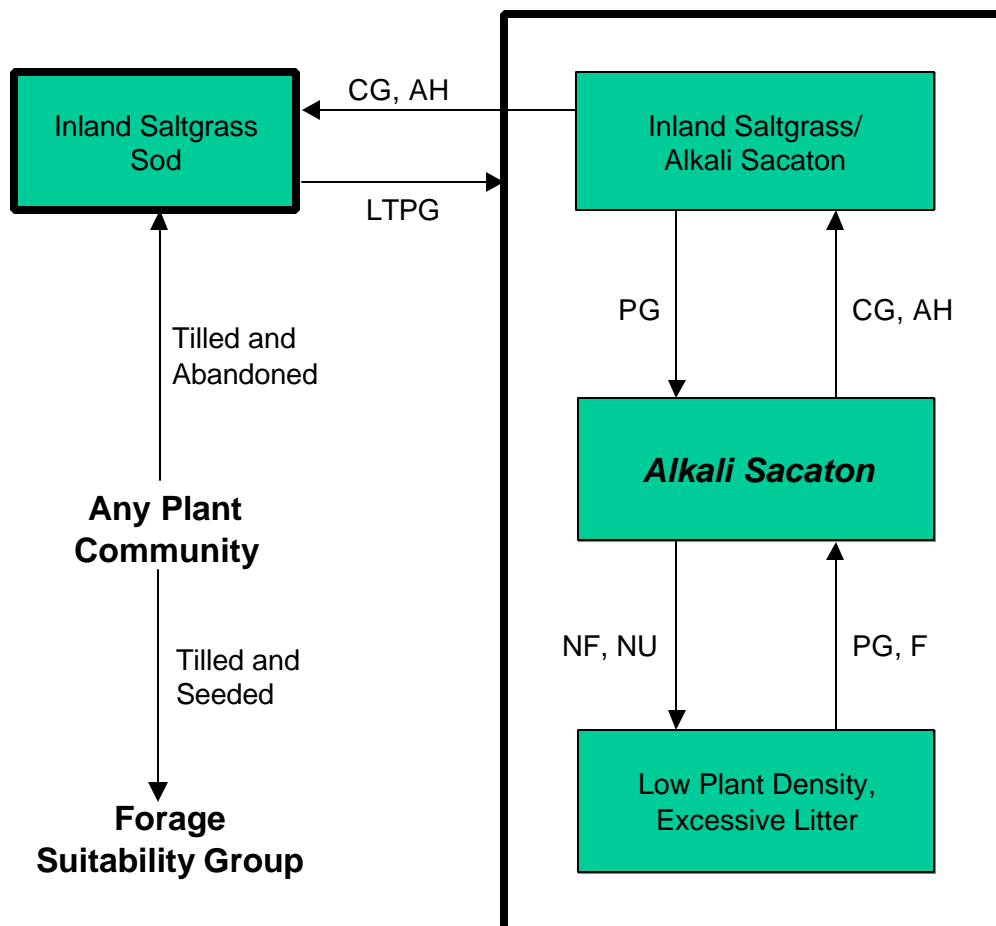
### Ecological Dynamics of the Site:

As this site deteriorates, species such as inland saltgrass and foxtail barley increase. Grasses such as alkali sacaton, alkali cordgrass, western wheatgrass and slender wheatgrass will decrease in frequency and production.

Interpretations are primarily based on the Alkali Sacaton Plant Community. It has been determined by study of rangeland relic areas, areas protected from excessive disturbance, and areas under long-term rotational grazing regimes. Trends in plant community dynamics ranging from heavily grazed to lightly grazed areas, seasonal use pastures, and historical accounts also have been used. Subclimax plant communities, states, transitional pathways, and thresholds have been determined through similar studies and experience.

The following is a diagram that illustrates the common plant communities that can occur on the site and the transition pathways between communities. The ecological processes will be discussed in more detail in the plant community descriptions following the diagram.

### Plant Communities and Transitional Pathways (diagram)



**AH** - annual haying; **CG** - continuous grazing w/o adequate recovery periods; **F** - Fire; **LTPG** - long term prescribed grazing (> 40 years); **NF** - no fire; **NU** - non-use; **PG** - prescribed grazing w/ adequate recovery periods

## Plant Community Composition and Group Annual Production

		Alkali Sacaton		
COMMON/GROUP NAME	SYMBOL	Group	lbs./acre	% Comp
<b>GRASSES</b>			<b>2240 - 2660</b>	<b>80 - 95</b>
alkali sacaton	SPAI	1	560 - 1120	20 - 40
inland saltgrass	DISP	2	280 - 560	10 - 20
western wheatgrass	PASM	3	280 - 560	10 - 20
<b>WARM-SEASON GRASSES</b>		<b>4</b>	<b>140 - 700</b>	<b>5 - 25</b>
switchgrass	PAVI2	4	0 - 420	0 - 15
sand dropseed	SPCR	4	0 - 280	0 - 10
alkali cordgrass	SPGR	4	0 - 280	0 - 10
alkali muhly	MUAS	4	0 - 140	0 - 5
blue grama	BOGR2	4	0 - 140	0 - 5
little bluestem	SCSC	4	0 - 140	0 - 5
<b>OTHER NATIVE GRASSES</b>		<b>5</b>	<b>280 - 560</b>	<b>10 - 20</b>
plains bluegrass	POAR3	5	140 - 280	5 - 10
slender wheatgrass	ELTRT	5	140 - 280	5 - 10
foxtail barley	HOJU	5	0 - 140	0 - 5
other perennial grasses	2GP	5	0 - 140	0 - 5
<b>GRASS-LIKES</b>		<b>6</b>	<b>140 - 420</b>	<b>5 - 15</b>
sedge	CAREX	6	0 - 280	0 - 10
Baltic rush	JUBA	6	0 - 140	0 - 5
rush	JUNCU	6	0 - 140	0 - 5
spikerush	ELEOC	6	0 - 140	0 - 5
bulrush	SCIRP	6	0 - 140	0 - 5
<b>FORBS</b>		<b>7</b>	<b>0 - 140</b>	<b>0 - 5</b>
arrowgrass	TRPA6	7	0 - 28	0 - 1
common dandelion	TAOF	7	0 - 28	0 - 1
cudweed sagewort	ARLU	7	0 - 28	0 - 1
heath aster	SYER	7	0 - 28	0 - 1
milkvetch	ASTRA	7	0 - 28	0 - 1
prairie gentian	EUEXR	7	0 - 28	0 - 1
Pursh seepweed	SUCA2	7	0 - 28	0 - 1
scouringrush	EQHY	7	0 - 28	0 - 1
western ragweed	AMPS	7	0 - 28	0 - 1
other perennial forbs	2FP	7	0 - 56	0 - 2
<b>Annual Production lbs./acre</b>			<b>LOW</b>	<b>RV</b>
<b>GRASSES</b>			<b>1965 -</b>	<b>2450 - 2905</b>
<b>GRASS-LIKES</b>			<b>135 -</b>	<b>280 - 450</b>
<b>FORBS</b>			<b>0 -</b>	<b>70 - 145</b>
<b>TOTAL</b>			<b>2100 -</b>	<b>2800 - 3500</b>

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors. RV = Relative value.

## Plant Community Composition and Group Annual Production

		Inland Saltgrass/ Alkali Sacaton			Inland Saltgrass Sod			Low Plant Density, Excessive Litter		
COMMON/GROUP NAME	SYMBOL	Grp	lbs./acre	% Conn	Grp	lbs./acre	% Conn	Grp	lbs./acre	% Conn
GRASSES			1360 - 1615	80 - 95		800 - 950	80 - 95		1520 - 1805	80 - 95
alkali sacaton	SPAI	1	340 - 680	20 - 40	1	0 - 100	0 - 10	1	285 - 570	15 - 30
inland saltgrass	DISP	2	510 - 680	30 - 40	2	600 - 900	60 - 90	2	285 - 570	15 - 30
western wheatgrass	PASM	3	0 - 85	0 - 5	3			3	190 - 380	10 - 20
WARM-SEASON GRASSES		4	34 - 170	2 - 10	4	0 - 50	0 - 5	4	190 - 475	10 - 25
switchgrass	PAVI2	4	0 - 34	0 - 2				4	95 - 285	5 - 15
sand dropseed	SPCR	4	0 - 85	0 - 5	4	0 - 20	0 - 2	4	0 - 95	0 - 5
alkali cordgrass	SPGR	4	0 - 85	0 - 5				4	0 - 95	0 - 5
alkali muhly	MUAS	4	0 - 85	0 - 5	4	0 - 20	0 - 2	4	0 - 95	0 - 5
blue grama	BOGR2	4	0 - 34	0 - 2	4	0 - 20	0 - 2	4	0 - 38	0 - 2
little bluestem	SCSC	4	0 - 34	0 - 2				4	95 - 190	5 - 10
OTHER NATIVE GRASSES		5	85 - 255	5 - 15	5	50 - 150	5 - 15	5	285 - 475	15 - 25
plains bluegrass	POAR3	5	0 - 85	0 - 5	5	0 - 20	0 - 2	5	95 - 190	5 - 10
slender wheatgrass	ELTRT	5	0 - 85	0 - 5				5	190 - 285	10 - 15
foxtail barley	HOJU	5	85 - 170	5 - 10	5	50 - 150	5 - 15	5	0 - 95	0 - 5
other perennial grasses	2GP	5	0 - 34	0 - 2	5	0 - 20	0 - 2	5	0 - 38	0 - 2
NON-NATIVE GRASSES		6	0 - 85	0 - 5	6	0 - 20	0 - 2	6	0 - 38	0 - 2
Kentucky bluegrass	POPR	6	0 - 85	0 - 5	6	0 - 20	0 - 2	6	0 - 38	0 - 2
GRASS-LIKES		7	85 - 255	5 - 15	7	50 - 150	5 - 15	7	190 - 380	10 - 20
sedge	CAREX	7	0 - 170	0 - 10	7	0 - 50	0 - 5	7	95 - 285	5 - 15
Baltic rush	JUBA	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
rush	JUNCU	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
spikerush	ELEOC	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
bulrush	SCIRP	7	0 - 85	0 - 5	7	0 - 50	0 - 5	7	0 - 190	0 - 10
FORBS		8	0 - 85	0 - 5	8	0 - 50	0 - 5	8	0 - 95	0 - 5
arrowgrass	TRPA6	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
common dandelion	TAOF	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
cudweed sagewort	ARLU	8	0 - 34	0 - 2	8	0 - 20	0 - 2	8	0 - 19	0 - 1
heath aster	SYER	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
milkvetch	ASTRA	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
prairie gentian	FUEXR	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
Pursh seepweed	SUCA2	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
scouringrush	EQHY	8	0 - 17	0 - 1	8	0 - 10	0 - 1	8	0 - 19	0 - 1
western ragweed	AMPS	8	0 - 34	0 - 2	8	0 - 20	0 - 2	8	0 - 19	0 - 1
other perennial forbs	2FP	8	0 - 34	0 - 2	8	0 - 20	0 - 2	8	0 - 38	0 - 2
Annual Production lbs./acre		LOW RV HIGH			LOW RV HIGH			LOW RV HIGH		
GRASSES		1220 · 1488 - 1735			755 · 875 - 990			1215 · 1568 - 1900		
GRASS-LIKES		80 · 170 - 275			45 · 100 - 155			185 · 285 - 400		
FORBS		0 · 43 - 90			0 · 25 - 55			0 · 48 - 100		
TOTAL		1300 · 1700 - 2100			800 · 1000 - 1200			1400 · 1900 - 2400		

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors. RV = Relative value.

## Plant Community and Vegetation State Narratives

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility, but they are the most prevalent and repeatable plant communities. The plant composition tables shown above have been developed from the best available knowledge at the time of this revision. As more data are collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as "Desired Plant Communities". According to the USDA NRCS National Range and Pasture Handbook, Desired Plant Communities (DPC's) will be determined by the decision makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

### Alkali Sacaton Plant Community

Interpretations are primarily based on the Alkali Sacaton Plant Community (this is also considered climax). This site developed with grazing by large herbivores and is well suited for grazing by domestic livestock. This plant community can be found on areas that are properly managed with grazing and/or prescribed burning, and sometimes on areas receiving occasional short periods of rest.

This plant community consists mainly of mid warm and cool season grasses. The principle dominant plants are alkali sacaton, inland saltgrass and western wheatgrass. Grasses of secondary importance are alkali cordgrass, slender wheatgrass, little bluestem and foxtail barley. Blue grasses, sedges and spike rushes occur as an understory. Forbs such as heath aster, milkvetch and prairie gentian are significant. This plant community is about 80% grasses, 15% grass-likes and 5% forbs by air-dry weight.

This plant community is adapted to high salt content inherent of the soils. White crusts can occupy many areas of the soil surface due to seasonal fluctuations in the water table. This is a healthy and sustainable plant community in terms of soil stability, watershed function and biological integrity.

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6546

Growth curve name: Nebraska/South Dakota Sandhills, Saline Subirrigated

Growth curve description: Warm-season dominant, cool-season subdominant, short & mid grasses.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	10	20	30	15	10	5	5	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Continuous grazing without adequate recovery periods following grazing events or annual haying will convert this plant community to the *Inland Saltgrass/Alkali Sacaton Plant Community*.
- Non-use and no fire will convert this plant community to the *Low Plant Density, Excessive Litter Plant Community*.

### Inland Saltgrass, Alkali Sacaton Plant Community

This plant community developed with relatively short term continuous grazing without periodic rest, or with annual haying. Plants resistant to removal are maintaining vigor. The potential vegetation is about 80% grasses, 15% grass-like plants, and 5% forbs. Inland saltgrass and alkali sacaton have increased in abundance. Most of the palatable plants such as western wheatgrass, slender wheatgrass, and alkali cordgrass are present but occur in lesser amounts.

The soil is stable; however, plant diversity has been reduced. The water cycle, nutrient cycle and energy flow are slightly reduced but continue to adequately function.

This community indicates key management concerns. Proper grazing management techniques at this point will stabilize the community at or near the Alkali Sacaton Plant Community. Increased disturbance can easily move the community to a more degraded scenario.

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6547

Growth curve name: Nebraska/South Dakota Sandhills, Saline Subirrigated, Hayed & Grazed

Growth curve description: Warm-season dominant, cool-season subdominant, short & mid grasses.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	5	15	35	20	20	5	2	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Continuous grazing or annual haying with no recovery opportunity shifts this plant community to the *Inland Saltgrass Sod Plant Community*.
- Prescribed grazing with adequate recovery opportunity will restore this community back to the *Alkali Sacaton Plant Community*.

### Low Plant Density, Excessive Litter Plant Community

This plant community occurs after an extended period of non-use by domestic livestock. Fire is uncommon or has been eliminated. Litter amounts have increased causing plant density to decrease. Typically, bunchgrasses (alkali sacaton) have developed dead centers and rhizomatous grasses (inland saltgrass) form small colonies because of a lack of tiller stimulation. Salt crusts and/or annual plant species such as kochia and Russian thistle commonly fill bare ground areas. Plant frequency and production have decreased. The potential vegetation is about 75% grasses, 20% grass-like plants, and 5% forbs.

Soil erosion is not a concern due to increased litter levels and landscape position.

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6536

Growth curve name: Nebraska/South Dakota Sandhills, Native Grasslands, Non-Use

Growth curve description: Warm-season dominant, cool-season subdominant, excessive litter.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	5	15	30	30	10	5	0	0	0



Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Prescribed grazing or fire with adequate recovery opportunity or prescribed burning will shift this plant community towards the *Alkali Sacaton Plant Community*.

### **Inland Saltgrass Sod Plant Community**

This plant community developed with further continuous grazing or areas that have been tilled and abandoned. Inland saltgrass dominates this plant community and has developed into a sod bound condition. Alkali sacaton has been greatly reduced. Slender and western wheatgrass are gone and have been replaced by increased amounts of foxtail barley. Plains pricklypear has increased. Forbs such as kochia and Russian thistle have also increased. The potential vegetation is about 80% grasses, 15% grass-like plants, and 5% forbs.

The plant community lacks diversity. Evaporation has increased resulting in a higher salt content on the soil surface. Organic matter/carbon reserves are severely diminished.

It will take a long time to bring this plant community back to the Alkali Sacaton Plant Community with management alone. Renovation of this plant community would be very costly due to high salt content and water table.

The following growth curve shows the estimated monthly percentages of total annual growth of the dominant species expected during a normal year:

Growth curve number: NE6548

Growth curve name: Nebraska/South Dakota Sandhills, Saline Subirrigated, Sod Bound

Growth curve description: Warm season dominant, short grasses.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	10	40	25	15	5	0	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Long term prescribed grazing with adequate recovery periods between grazing events will move this plant community to the *Inland Saltgrass/Alkali Sacaton Plant Community* and eventually to the *Alkali Sacaton Plant Community*. This process will require a long period of time, and may be difficult to attain depending on the degree of degradation.

## Ecological Site Interpretations

### Animal Community – Wildlife Interpretations

Alkali Sacaton Plant Community:

Inland Saltgrass/Alkali Sacaton Plant Community:

Low Plant Density, Excessive Litter Plant Community:

Inland Saltgrass Sod Plant Community:

### Animal Preferences (Quarterly – 1,2,3,4<sup>†</sup>)

Common Name	Cattle	Sheep	Horses	Deer	Antelope	Bison	Elk
alkali cordgrass	U D D U	N U N N	U D D U	N U N N	N U N N	U D D U	U D D U
alkali muhly	U U D U	U U D U	U U D U	N N N N	N N N N	U U D U	U U D U
alkali sacaton	U D D U	N U N N	U D D U	N U N N	N U N N	U D D U	U D D U
arrowgrass	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T
Baltic rush	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N
blue grama	U D P U	D P P D	U D P U	D P P D	D P P D	U D P U	U D P U
bulrush	U U U U	N N N N	U U U U	N N N N	N N N N	U U U U	U U U U
common dandelion	U D U U	U P P U	U D U U	U P P U	U P P U	U D U U	U P P U
cudweed sagewort	U U U U	U U D U	U U U U	U U D U	U U D U	U U U U	U U D U
foxtail barley	U D N N	N P N N	U D N N	N P N N	N P N N	U D N N	U D N N
heath aster	U U D U	U U P U	U U D U	U U P U	U U P U	U U D U	U U P U
inland saltgrass	N U U N	N N N N	N U U N	N N N N	N N N N	N U U N	N U U N
little bluestem	U D D U	N D N N	U D D U	N D N N	N D N N	U D D U	U D D U
milkvetch	U U U U	U D U U	U U U U	U D U U	U D U U	U U U U	U D U U
plains bluegrass	U D U D	N D N U	U D U D	U P N D	U P N D	U D U D	U D U D
prairie gentian	U U U U	N U U N	U U U U	N U U N	N U U N	U U U U	N U U N
Pursh seepweed	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U
rush	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N	N N N N
sand dropseed	N U N N	N U N N	N U N N	N U N N	N U N N	N U N N	N U N N
scouringrush	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T	T T T T
sedge	U D U D	U P N D	U D U D	U D U D	U D U D	U D U D	U D U D
slender wheatgrass	U P U U	N D U N	U P U U	N D U N	N D U N	U P U U	U P U U
spikerush	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U	U U U U
switchgrass	U D D U	U D U U	U D D U	N N N N	N N N N	U D D U	U D D U
western ragweed	U U U U	N N N N	U U U U	N N N N	N N N N	U U U U	N N N N
western wheatgrass	U P D U	N D N N	U P D U	N D N N	N D N N	U P D U	U P D U

**N** = not used; **U** = undesirable; **D** = desirable; **P** = preferred; **T** = toxic

<sup>†</sup> Quarters: 1 – Jan., Feb., Mar.; 2 – Apr., May, Jun.; 3 – Jul., Aug., Sep.; 4 – Oct., Nov., Dec.

## Animal Community – Grazing Interpretations

The following table lists suggested stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. With consultation of the land manager, more intensive grazing management may result in improved harvest efficiencies and increased carrying capacity.

Plant Community	Production (lbs./acre)	Carrying Capacity* (AUM/acre)
Alkali Sacaton	2600	0.82
Inland Saltgrass/Alkali Sacaton	1700	0.54
Inland Saltgrass Sod	1000	0.32
Low Plant Density, Excessive Litter	1900	0.60

\* Continuous season-long grazing by cattle under average growing conditions.

If distribution problems occur, stocking rates must be reduced to maintain plant health and vigor.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage. During the dormant period, the forage for livestock will likely be lacking protein to meet livestock requirements, and added protein will allow ruminants to better utilize the energy stored in grazed plant materials. A forage quality test (either directly or through fecal sampling) should be used to determine the level of supplementation needed.

## Hydrology Functions

Forage production on these sites is limited by saline conditions. Proper management is critical to the continued productivity of these sites. Grass reestablishment on overgrazed or tilled sites is often slow and difficult because increased evaporation (from exposed soil surfaces) causes increased salt concentration at the soil surface. The Wildhorse soils on this site are in Hydrologic Soil Group A, but may include localized areas of other soils in Groups B and C. Infiltration rates for Wildhorse soils are extremely high, but high water tables provide subirrigation of salt tolerant vegetation. Surrounding upland areas tend to have permeable soils and surface inflow peaks on these sites are often muted. These sites do not flood or are flooded only occasionally for brief periods.

Rills, gullies and water flow patterns are not present. Pedestals are only slightly present. Litter falls in place, and signs of movement are not common. Chemical and physical crusts are rare, and not significant for hydrologic considerations. Cryptogamic crusts may be present but are not significant for hydrologic considerations. Overall this site has the appearance of being stable and productive except areas of white crust (salts) may be present.

## Recreational Uses

This site provides hunting opportunities for upland game species. The wide variety of plants which bloom from spring until fall have an esthetic value that appeals to visitors.

## Wood Products

No appreciable wood products are present on the site.

## Other Products

Seed harvest of native plant species can provide additional income on this site.

**Site Type: Rangeland**  
**MLRA: 65 – Nebraska Sand Hills**

**Saline Subirrigated 14-22" P.Z.**  
**R065XY025NE**

## Supporting Information

### Associated Sites

(065XY011NE) – Sandy 14-17" P.Z.	(065XY033NE) – Sands 17-22" P.Z.
(065XY032NE) – Sandy 17-22" P.Z.	(065XY055NE) – Sands 22-25" P.Z.
(065XY054NE) – Sandy 22-25" P.Z.	(065XY022NE) – Wetland
(065XY012NE) – Sands 14-17" P.Z.	(065XY023NE) – Wet Subirrigated

### Similar Sites

(065XY024NE) – Subirrigated  
[big bluestem, Indiangrass dominant; less prairie cordgrass; more productive]

## Inventory Data References

Information presented here has been derived from NRCS clipping data and other inventory data. Field observations from range trained personnel was also used. Those involved in developing this site include: Dave Cook, Rangeland Management Specialist, NRCS; Dwight Hale, Engineer, NRCS; Sheila Luoma, Resource Conservationist, NRCS; Marla Shelbourn, Rangeland Management Specialist, NRCS; Dave Steffen, Rangeland Management Specialist, NRCS.

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
SCS-RANGE-417	2	1969 – 1980	NE	Garden, Morrill
Ocular estimates	0	19 -19	XX	county

## State Correlation

This site has been correlated with South Dakota.

## Type Locality

<b>State:</b>	<b>Township:</b>	<b>Latitude:</b>
<b>County:</b>	<b>Section:</b>	<b>Longitude:</b>
<b>General Legal Description:</b>	<b>Range:</b>	<b>Is the type locality sensitive? (Y/N):</b>

### Field Offices Counties

Ainsworth, NE	Brown, Keya Paha & Rock
Alliance, NE	Box Butte
Bridgeport, NE	Morrill
Martin, SD	Bennett & Shannon
North Platte, NE	Lincoln, Logan & McPherson
Ogallala, NE	Arthur & Keith

### Field Offices Counties

Oshkosh, NE	Garden
Rushville, NE	Sheridan
Thedford, NE	Blaine, Grant, Hooker & Thomas
Valentine, NE	Cherry
White River, SD	Todd

## Relationship to Other Established Classifications

Level IV Ecoregions of the Conterminous United States; 44a – Nebraska Sand Hills.

## Other References

Other references used include: USDA NRCS Water & Climate Center, USDA NRCS National Range and Pasture Handbook, USDA NRCS Soil Surveys from various counties, Atlas of the Sandhills.

## Site Description Approval

\_\_\_\_\_  
State Range Management Specialist

\_\_\_\_\_  
Date

\_\_\_\_\_  
State Range Management Specialist

\_\_\_\_\_  
Date